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THE PREVENTION OF THE COMMUNICABLE DISEASES,

FROM THE STANDPOINT OF THE STATE BOARD OF HEALTH.

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Since this topic was assigned to me I have not had an opportunity to obtain a formal expression of the views of the State Board of Health on the subject, therefore the Board should not be held responsible for all I may say; but, judging from its work during the past fourteen years, the Board, evidently, believes that the "Prevention of the Communicable Diseases" is one of the most important measures which can engage its attention, and that work for this purpose is the most important that local boards of health can undertake. It is not difficult to imagine why this is true, because, by studying the vital statistics, it is found that the diseases which cause the greater proportion of the premature deaths in Michigan are the communicable diseases. Named in the order of their importance, the five diseases which cause most deaths in Michigan are: (1) consumption, (2) diphtheria, (3) pneumonia, (4) typhoid fever, and (5) scarlet fever. Excepting perhaps pneumonia, these are all communicable diseases; in common parlance, they are "catching;" not all of them are contagious, but all are in some manner spread from person to person. It thus appears not only that the communicable diseases have caused a large proportion of the premature deaths, but a large proportion of *all* the deaths, and that if we should prevent these communicable diseases we would change the character of our vital statistics,—a much larger proportion of our people would die in ripe old age, a much larger proportion of the living inhabitants would be in the vigor of youth, and in the productive and enjoyable period of middle age; there would be prevented in each year, in this State of Michigan, two or three thousand deaths of children from diphtheria and scarlet fever, and perhaps a thousand deaths of persons in the prime of life, from typhoid fever. Knowledge of these facts should prompt to greater efforts for the prevention of these diseases, and, inasmuch as we now know how to prevent them, it seems strange that people do not uniformly act for their prevention. Probably the people would so act if they all knew that so large a proportion of the mortality is caused by these diseases, that they *are* preventable, and especially if all knew just *how* to prevent each one of these diseases.

These sanitary conventions do much to spread such information; but they do not reach the people of the whole State fast enough, and the local boards of health, engaged as they are, in the active work of restricting diseases which should have been prevented, and in other practical sanitary work, need the aid supplied by the different lines of work carried on by the State Board of Health, in order to spread that information which is essential to induce the people generally to sustain and coöperate with the local health authorities in restricting and preventing these diseases.

SOME OF THE WORK OF THE STATE BOARD OF HEALTH.

By means of reports from local health officers, physicians and others, and in all practicable ways, the State Board of Health collects information on these subjects; and in all practicable ways it seeks to spread this information "where it will do the most good." It aims to "strike while the iron

is hot"—that is, it tries to have the information which it collects, and the best advice which it can give, placed before people at such times that it will be most likely to be accepted. Pamphlets, such as are distributed in this audience, containing concise statements of facts and directions how to restrict each one of these communicable diseases, are sent to localities where the diseases occur, to be distributed to the neighbors of the families in which the communicable disease occurs, because at such times of danger the neighbors will be most likely to read such pamphlets, and because after reading them they will then be most likely to coöperate with the local health officer for the restriction of the disease. Thousands of pamphlets on each of the most dangerous communicable diseases are distributed by the State Board. They are being distributed all the time. In order to distribute each kind of pamphlets in the localities where there are persons sick with the particular communicable disease of which that kind of pamphlet treats, it is necessary to know the localities in which each such disease occurs; and this information to the office of the State Board is provided for by a law which requires every health officer in the State to keep the secretary of the State Board of Health constantly informed on this subject. There are in Michigan over 1,400 local boards of health,—each one required by law to have a health officer. The law requires every householder and every physician who knows of a case of one of these dangerous diseases under his care to promptly notify the health officer or other officer of the local board of health. When these laws are faithfully obeyed, the local health officer can take prompt action for the restriction of the dangerous disease, the secretary of the State Board of Health can promptly supply pamphlets of instructions which the health officer can distribute to the neighbors, and frequently the central office can take other action which tends to aid the local officer in restricting the outbreak and preventing an epidemic; and what is of even greater consequence, in so educating the people of that vicinity that thereafter they will be more ready to restrict that disease, and many of them be able to prevent outbreaks which otherwise would occur. Although this method of teaching the prevention of each of these diseases, while the disease is threatening, seems to be the best that is practicable for the State Board of Health, it seems too bad that it is not possible for the people of a locality to learn before a first outbreak occurs; but something like experience or personal observation seems to be essential in order to awaken sufficient interest in the subject.

But while it is probably impossible to reach the adult population with facts and advice on these subjects faster than in some such way as it is being done by the methods just described, it certainly seems possible, so far as concerns the rising generation, to strike at the root of *this* ignorance which annually causes the death of thousands among us. This leads me to say that, in my opinion,—

THE PREVENTION OF THE DANGEROUS COMMUNICABLE DISEASES SHOULD BE
TAUGHT IN THE PUBLIC SCHOOLS.

As that knowledge which tends *directly* to the preservation of life is of more worth than that knowledge which tends *indirectly* thereto, the teaching of physiology and hygiene in the public schools as it is usually done may well be displaced by the teaching of the exact measures required for the prevention of those dangerous communicable diseases which cause the greater part of the deaths. Of course, if the teaching of physiology and hygiene as it is usually taught is of more consequence than some other studies, the displacement should be of such other studies; but the thought I wish to con-

vey is that, whatever is displaced, it is of prime importance for the welfare of humanity that the exact principles of the prevention of those diseases which cause the most deaths should be taught in the public schools. It is as true now as when the Bible was written that "My people are destroyed for lack of knowledge."*

When the present methods of teaching "physiology and hygiene" were invented, *sanitary science* had not been evolved; but now we know approximately what diseases kill us, and we know how to prevent the most important of them. Is it not high time this knowledge was being utilized by the teachers throughout this country, for the saving of the lives of those whom they are educating?

Here let me answer the question which some of you are wishing to ask—How do we know that we have that valuable knowledge directly useful for the saving of life? The answer is: Because whenever we act upon that knowledge the saving of life follows, and it follows so uniformly that we have come to believe that it is a result of such action. A few illustrations on a large scale are as follows: Computations, made and published a year or two since † show that since the State Board of Health was established, and the approved methods for the restriction and prevention of small-pox have been attempted, the deaths from small-pox in Michigan, returned to the office of the Secretary of State, have been much less than during the five years just before the Board was established. Compared with that period, and making allowance for increase of population, about 1,000 persons appear to have been saved from death from small-pox in Michigan during the eleven years, 1873-84. Similar computations indicate that about three thousand persons were saved from death from scarlet fever in Michigan during the same period of time.

Coming down to a more recent period of time, official reports from the health officers in Michigan for the year 1886, have been compiled, and among the pamphlets distributed in this audience you may see two diagrams which exhibit graphically some important facts worked out, by Mr. George E. Willits, in the office of the State Board of Health. From the diagram relating to scarlet fever, you may see that while in those outbreaks in which isolation or disinfection was neglected there was an average of nearly fourteen cases to one outbreak, in those outbreaks in which both these approved measures were enforced, there was an average of less than three cases to an outbreak—therefore, there were eleven cases to an outbreak saved by the more perfect methods, namely by isolation and disinfection. That is, in the fifty-eight outbreaks in which the more perfect methods were enforced there was, compared with those of less perfect methods, a saving of 638 cases of sickness and forty-eight lives from this one disease in a single year. Probably the saving of life and health through efforts at the restriction and prevention of scarlet fever in Michigan in that year were many times what these figures show; but these figures supply a scientific basis for the comparison of two methods of action. The facts are obtained from the official reports of the health officers in whose jurisdictions the outbreaks occurred, and they are reliable so far as relates to all outbreaks properly reported.

The other diagram before you, relating to diphtheria in Michigan in 1886, shows even a greater saving of life and health through efforts for the restriction and prevention of that disease, there being an average of over sixteen cases to an outbreak in those outbreaks in which isolation or disinfection

*Hosea, Chap. III., 6.

†Proceedings, Michigan State Board of Health, pp. 11-16; Annual Report Michigan State Board of Health, 1886, pp. 177-181.

tion was neglected, while there were less than three cases to an outbreak in those outbreaks where both isolation and disinfection were enforced,—a saving of over thirteen cases and over two deaths to each of the 116 outbreaks in which the more perfect methods were employed, compared with those outbreaks in which one important part of the work was omitted. This indicates that in the 116 outbreaks alone there were saved 298 lives and over 1,500 cases of sickness from diphtheria in Michigan in a single year by improved methods for its restriction and prevention.

These computations from official reports are submitted, not as indicating the total saving of life and health from diphtheria and scarlet fever in that year by such efforts as are recommended by the State Board of Health, but as supplying positive evidence that these diseases *can* be restricted and in great part prevented whenever the people and their officers coöperate promptly and fully in obeying the laws, and in carrying out the advice which is freely given by the State Board of Health.

If you ask what is that advice which the State Board of Health gives,—what, in its opinion, are the best known measures for the restriction and prevention of each of the dangerous communicable diseases,—I must say that the time at our disposal this evening will hardly permit of my stating the advice in full; but it may be said that the methods are not the same for all diseases. Thus, the most important preventive of small-pox is vaccination; and small-pox, diphtheria and scarlet fever are *contagious* diseases, and demand isolation of the sick, and disinfection of the entire contents of the house, or at least of the room in which the disease has been; while typhoid fever is probably not contagious, but demands the disinfection of all bowel discharges, and especial care for the protection of the purity of the drinking water. The spread of consumption may probably be lessened by the thorough disinfection of all the sputa of consumptives.

But for full though concise statements, I must refer you to the several pamphlets which are published by the State Board of Health for gratuitous distribution, copies of which have been distributed here this evening, and which will be sent from the office of the State Board to any person who wishes to receive and read them, so that, if any person fails to receive them this evening, a postal-card request addressed to the office of the State Board of Health at Lansing, will secure a copy of any one or of each of the several pamphlets which relate to the restriction and prevention of the dangerous communicable diseases.

CLOSING OF THE CONVENTION.

On motion of Dr. Ellis, a vote of thanks was extended to the Secretary and members of the State Board of Health, to those who had read papers before the convention, and especially to the secretary of the convention for his untiring efforts in making the convention a success.

Dr. Henry B. Baker, responded on behalf of the State Board, and moved a vote of thanks to the local committee which had charge of the convention. His motion prevailed.

President T. J. Ramsdell then closed the convention, and said: When we think over, digest and assimilate the truths learned during these two days, we will find this one of the most valuable conventions ever held in the city. To those who are not here I must say "You have made a mistake."

I trust that another convention will be held in our city, and I can say to the members of the State Board of Health, whenever you are willing to come again, we will be glad to see you.

Scarlet fever in Michigan in 1886: The Average Numbers of Cases and Deaths per outbreak:—1, in all the 324 outbreaks reported; 2, in the 221 outbreaks in which it is doubtful whether or not Disinfection or Isolation were secured; 3, in the 45 outbreaks in which Isolation or Disinfection or both were neglected; and 4, in the 58 outbreaks in which Isolation and Disinfection were both enforced. (Compiled in the office of the Secretary of the State Board of Health from reports made by local health officers.)



